

29th Annual Environmental Engineering and Science Symposium
2024 AEESP Distinguished Speaker Lecture
Schedule – April 12, 2024

Time	Event	Location
8:00 – 9:00 am	Continental Breakfast & Registration	CEEB 1 st floor
8:50 – 9:00 am	Opening Remarks: Prof. Rosa Espinosa-Marzal	CEEB 1017
9:00 – 10:00 am	Keynote Speaker¹: Distinguished CEE alumnus Mr. Damon S. Williams (Prof. Benito Marinas introduces)	CEEB 1017
10:00 – 10:50 am	Poster Session 1	CEEB 1 st floor
11:00 am – noon	Podium Session 1A (Moderators: Gus Greenwood, Lilian Burritt) <i>Air Quality, Indoor Air Quality, Climate Change</i>	Newmark 1311
11:00 am	Yoonjoo Seo - Yeast Surface-Displayed Quenchbody as a Rapid and Simple Biosensor for One-Step Airborne Virus Detection.	
11:20 am	Sudheer Salana - Evaluation of PM2.5 Induced Antioxidant Consumption and ROS Generation as a Proxy for Aerosol Toxicity.	
11:40 am	P. S. Ganesh Subramanian - Oxidative potential and exposure assessment of PM emission from household appliances.	
11:00 am – noon	Podium Session 1B (Moderators: Laura Gray, Jeethendra Uppala) <i>Emerging Technologies for Water Quality and Processes</i>	Newmark 3310
11:00 am	Yurui Li - Faradaic Rhenium Recovery with Polyvinyl Ferrocene (PVF) Coated Carbon Electrodes. <i>Artificial Intelligence, Data Science in Environmental Engineering</i>	
11:20 am	Lin Guo - Probabilistic chemical surrogate modeling with uncertainty quantification using ESINDy.	
11:40 am	Renjing Jiang - “Gold Mining”: Machine learning-assisted discovery of 60 plastic-degrading enzymes from 0.1 million hypothetical enzymes.	
12:00 – 1:00 pm	Lunch	CEEB 3 rd floor Bahl Bridge
1:10 - 2:30 pm	AEESP Distinguished Keynote Speaker¹: Prof. Elisabeth A. Edwards (Prof. Wei Na introduces)	NCSA auditorium
2:40 – 3:30 pm	Poster Session 2	CEEB 1 st floor
3:40 – 4:40pm	Podium Session 2A (Moderators: Yurui Li, Oluchi Nweke) <i>Sustainability and Resource Recovery</i>	Newmark 1311
3:40 pm	Quanhui Ye - Engineering a renewable phytase biocatalyst for phosphate conversion from biorefinery liquid waste.	
4:00 pm	Joaquin Yus - The topography of the substrate affects coral settlement.	
4:20 pm	Samuel Aguiar - Understanding the Influence of Organic Additives on Struvite Precipitation using a Discrete Population Balance Model.	
3:40 – 4:40pm	Podium Session 2B (Moderators: Yoonjoo Seo, Nehal Jain) <i>Artificial Intelligence, Data Science in Environmental Engineering</i>	Newmark 1310
3:40 pm	Manho Park - A machine-learned advection operator to accelerate air quality modeling without losing spatial details.	
4:00 pm	Tahsina Alam - Application of Machine Learning in Exploring the Synergistic and Antagonistic Interactions among the Inorganic and Organic Particulate Matter Components in causing Oxidative Potential Based on the Dithiothreitol Assay.	
4:20 pm	Xiaokai Yang - Atmospheric chemistry surrogate modeling with sparse identification of nonlinear dynamics.	
4:50 – 5:10 pm	Announcement of Awards: Organizing Committee, Prof. Rosa Espinosa-Marzal confers	Newmark 1310
5:10 – 5:15 pm	Closing Remarks: Dr. Sotiria Koloutsou-Vakakis	Newmark 1310

¹ Title and abstract at the Symposium website: <https://publish.illinois.edu/2024-uiuc-cee-environmentalsymposium/>

Poster Sessions

10:00-10:50 am - CEEB (Hydro) 1 st Floor Poster Session 1 - Presenters 1-21	2:40-3:30 pm - CEEB (Hydro) 1 st Floor Poster Session 2 - Presenters 1-21
<p style="text-align: center;"><i>Air Quality, Indoor Air Quality, Climate Change</i></p> <ol style="list-style-type: none"> 1. Xiao Ran- A Community-Centric, GIS-Enabled Community Air Pollution Modeling Web Tool for Non-Technical Users. 2. Oluchi Nweke - Chemical, Oxidative, and Toxicological Profiles of Fine Ambient Particulate Matter in Alaska. 3. Shiyuan Wang - Global disparities in PM2.5 exposure caused by consumption of goods and services. 4. Qurat ul ain Fatima - Hyperlocal air pollution prediction using traffic camera footage and computer vision techniques. 5. Laura Almeida - Unveiling the True Environmental Cost of Bike-Sharing Systems: A Systematic Literature Review. <p style="text-align: center;"><i>Artificial Intelligence, Data Science in Environmental Engineering</i></p> <ol style="list-style-type: none"> 6. Mukesh Pulaganti Venkatappa- Comparing Investments in Sustainability with Cost Reduction from Waste Due to Lean Construction. 7. Jialin Liu - Developing a standard library of symbolic equation-based geoscience algorithms. 8. Maria Florencia Bianco - Location models for prioritizing integrated biorefinery deployment opportunities in the United States. <p style="text-align: center;"><i>Sustainability and Resource Recovery</i></p> <ol style="list-style-type: none"> 9. Tripta Bhattacharjee - Rebound Effect of Decarbonization Projects: A comprehensive analysis of reported CDP data. 10. Alex Deptula- Increasing control of gel interfaces for more sustainable biomimetics. 11. Yiming Liu- Evaluating environmental impacts of historical oil spill incidents in North America. 12. Wenjun Guo- Economic and Environmental Sustainability of Sustainable Aviation Fuel Production. 13. Neha Shakelly - Towards Sustainable Skies: Evaluating Bio-jet Fuel's Environmental Impact. 14. Jianan Feng - Inventory of wastewater treatment plants in the United States and their associated energy usage and greenhouse gas emissions. <p style="text-align: center;"><i>Emerging Technologies for Water Quality and Processes</i></p> <ol style="list-style-type: none"> 15. Francisco Montalvo- Enhancing Water Access and Health in Drought-Affected Regions: A Preliminary Study on Point-of-use Water Filter Intervention. 16. Will O'Brien - Integrating Non-Sewered Inputs into Centralized Treatment – Preliminary Modeling. 	<p style="text-align: center;"><i>Sustainability and Resource Recovery</i></p> <ol style="list-style-type: none"> 1. Xuhui Zhang - Long-range Surface Forces in Salt-in-Ionic Liquids. 2. Jingyu Li - The impact of CaCO₃-based substrates on the six-month juvenile coral skeletal morphology and composition. 3. Ma Yongjian - Influence of polymer-mineral interaction on calcium phosphate mineralization. 4. Lavanya Kudli - Sustainability evaluation of azelaic acid production using techno-economic analysis and environmental life cycle assessment. 5. Junhyung Park- Advanced Modeling of Carboxylate Production in Anaerobic Digestion Using QSDsan with ADM1 Integration. 6. Gus Greenwood- Novel 2D nanomaterial systems for use in sustainable technologies. 7. Xiaohan Wu - Comparative Life Cycle Assessment of Copper Production Methods: Pyrometallurgy, Hydrometallurgy, and Bioleaching. 8. Ming Jun Lee - Understanding the Interfacial Properties Of Positively Charged Double Network Hydrogels. 9. Kangdi Sun - Insight into the assembly of lipid-hyaluronan complexes in osteoarthritic conditions. 10. Hanze Dong - The Development and Effects of Sponge City Construction in China. 11. Binxin Fu - Interfacial process underlying the environment-dependent friction on calcite single crystals. 12. Venkat Roy - Spatializing Life Cycle Assessment to identify Localized Impacts. 13. Qianlu Zheng - Impact of Multivalent Cations on Interfacial Layering in Water-in-Salt Electrolytes 14. Emily Lin - Spatially Explicit Life Cycle Assessment and Techno-Economic Analysis of Miscanthus-Derived Biofuel and Bioproducts. 15. Jeethendra Sai Uppala - Enhancing Sustainability in Construction Projects with BIM <p style="text-align: center;"><i>Emerging Technologies for Water Quality and Processes</i></p> <ol style="list-style-type: none"> 16. Yuqing Mao - CRISPR-Cas9 modified multiplex target-enriched next-generation sequencing for antibiotic resistance gene detection in environmental samples. 17. Wanyue Hui - Electrochemical filtration for emerging contaminant removal. 18. Amanda M. López-Patiño - Cost-Effective Water Treatment and Energy Production with Microalgae 19. Lilian Burritt - Emerging Technologies and Barriers to Advanced Water Reuse.

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| <p>17. Nhung Do - Wastewater Epidemiological Surveillance in Vietnam: Detection of prevalence of SARS-CoV-2 in neighborhood-scale wastewater-based epidemiology studies.</p> <p>18. Arthur Schmidt- Challenging Conventional Wastewater Sampling Methods.</p> <p>19. Jayne Allen - Modeling novel redox-mediated electro dialysis in the downstream processing of bio-based succinic acid.</p> <p>20. Nehal Jain - The Potential of Dehalococcoides for Sustainable Remediation of Halogenated Pollutants: A Comprehensive Review.</p> <p>21. Vineeth Kanteti - Designing a Methodological Framework: Assessing Economic and Environmental Implications of Centralized Wastewater Sewer Networks Across Diverse Contexts.</p> | <p>20. Johanna Arita - Characterizing the potential of decentralized system technologies to advance the sustainability of non-sewered sanitation in a European city.</p> <p>21. Ejike Ken-Opurum - Effects of different concentrations of phosphorus on horizontal gene transfer.</p> |
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